
Communications
on
**PURE AND APPLIED
MATHEMATICS**

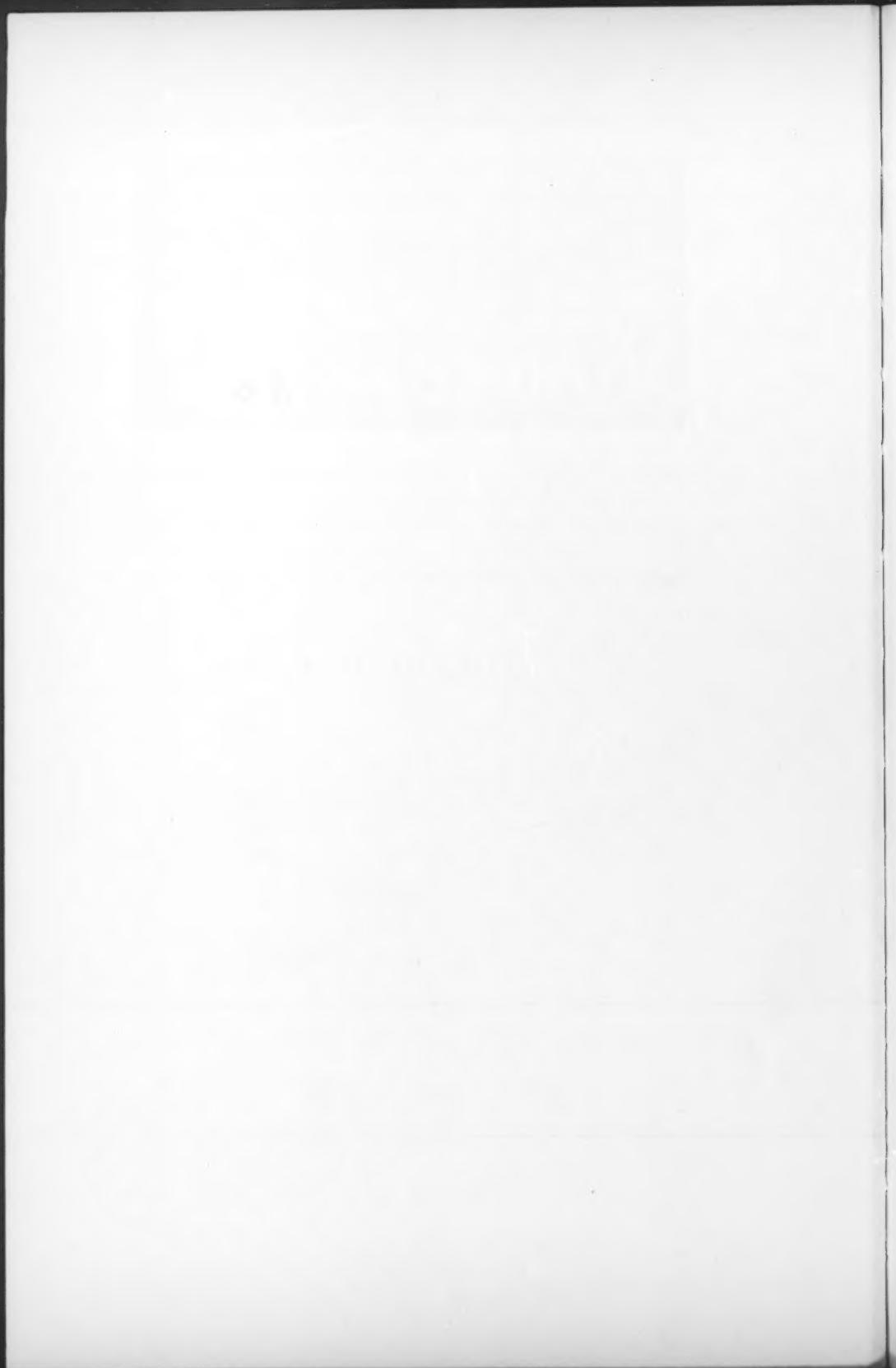
A JOURNAL ISSUED QUARTERLY BY
THE INSTITUTE FOR MATHEMATICS AND MECHANICS
NEW YORK UNIVERSITY

VOLUME IV • 1951

INTERSCIENCE PUBLISHERS, INC., NEW YORK

Copyright, 1951, by Interscience Publishers, Inc. - All rights reserved

Reproduction in whole or in part permitted for
any purpose of the United States Government



Communications on
PURE AND APPLIED MATHEMATICS
CONTENTS

Volume IV, Nos. 1-4, 1951

NUMBER 1, JUNE

LEWY, H., On Minimal Surfaces with Partially Free Boundary	1
HEISENBERG, W., On the Mathematical Frame of the Theory of Elementary Particles	15
MONTRÖL, E. W., and BERLIN, T. H., An Analytical Approach to the Ising Problem	23
TATE, J., On the Relation between Extremal Points of Convex Sets and Homomorphisms of Algebras	31
PORITSKY, H., Extension of Weyl's Integral for Harmonic Spherical Waves to Arbitrary Wave Shapes	33
SCHELKUNOFF, S. A., Kirchhoff's Formula, Its Vector Analogue, and Other Field Equivalence Theorems	43
BREMNER, H., On the Diffraction Theory of Gaussian Optics	61
KELLER, J. B., and BLANK, A., Diffraction and Reflection of Pulses by Wedges and Corners	75
SPENCE, R. D., and WELLS, C. P., Vector Wave Functions	95
BREMNER, H., The W.K.B. Approximation as the First Term of a Geometric-Optical Series	105
SCHELKUNOFF, S. A., Remarks Concerning Wave Propagation in Stratified Media	117
RYDBECK, O. E. H., The Theory of Magneto Ionic Triple Splitting . .	129

NUMBER 2/3, AUGUST

FRIEDRICH, K. O., Mathematical Aspects of the Quantum Theory of Fields—Parts I and II	161
---	-----

51051
C73

VOLUME CONTENTS

KLINÉ, MORRIS, An Asymptotic Solution of Maxwell's Equations	225
MARCUVITZ, NATHAN, Field Representations in Spherically Stratified Regions	263
FRIEDMAN, BERNARD, Propagation in a Non-homogeneous Atmosphere	317
RICE, STEPHEN O., Reflection of Electromagnetic Waves from Slightly Rough Surfaces	351

NUMBER 4, NOVEMBER

SHIFFMAN, M., and SPENCER, D. C., The Force of Impact on a Cone Striking a Water Surface (Vertical Entry)	379
BREMNER, H., The Jumps of Discontinuous Solutions of the Wave Equation	419
COPSON, E. T., The Transport of Discontinuities in an Electromagnetic Field	427
FICKEN, F. A., The Continuation Method for Functional Equations .	435
LAX, PETER D., A Remark on the Method of Orthogonal Projections .	457

